

REMARKS

In the Office Action mailed on April 9, 2009, the Examiner objected to the Abstract and rejected claims 1-7. Claims 1-7 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 1-7 were additionally rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,393,885 to Cadena ("Cadena") in view of U.S. Patent No. 4,494,280 to Blaimschein ("Blaimschein").

In the attached amendment, Applicants have amended the Abstract and claims 1-7 in accordance with the Examiner's suggestions. Specifically, claims 1-7 have been amended to address matter of form and to conform to accepted U.S. practice. New claims 9-13 were added in light of these amendments, as well as previous amendments made in the Response to Restriction Requirement submitted February 3, 2009. Claim 7 has additionally been amended to change its dependency from claim 1 to new claim 9. Support for amendments to claims 1-7 and new claims 9-13 can be found, for example, in the claims as originally filed and on pages 4-7 of the specification as originally filed. No new matter has been introduced by these amendments.

In view of the amendments to the Abstract and the claims, together with the following remarks, Applicants respectfully request reconsideration and withdrawal of all grounds of rejection.

In the Specification

The Examiner objected to the Abstract of the disclosure and requested the removal of "Fig. 4 is intended for the abstract." Applicants have deleted this sentence from the Abstract. Additional amendments to the Abstract have been made, in marked-up version, to conform to accepted U.S. practice. A clean version of the Abstract including all changes is attached herewith. Applicants respectfully submit that no new matter has been introduced by the amendments to the Abstract.

Applicants believe that the Abstract as amended addresses and cures the objection to the specification. Thus, reconsideration and withdrawal of the objection is respectfully requested.

Rejections Under 35 U.S.C. § 112, second paragraph

Claims 1-7 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1-7 have been amended.

Specifically, claim 1 has been amended to delete the “for example” and “such as” phrases. Claim 1 has been additionally amended to conform to accepted U.S. practice and to recite in part, “the process comprising: deep rolling the roundings with a deep rolling tool; and while maintaining a distance interval to an individual transition in each case, machining the bearing position concerned by removal of material with a small cutting depth.” Support for this amendment can be found, for example, in original claim 1 and on p. 4 of Applicants’ specification as filed.

Claims 2-7 have been amended to conform to accepted U.S. practice and to improve clarity. Support for these amendment can be found, for example, in the claims as originally filed and one pages 4-7 of the specification as originally filed.

Applicants believe that these amendments address and cure the Examiner’s concerns with respect to definiteness and formality. As such, Applicants respectfully request reconsideration and withdrawal of all 35 U.S.C. § 112 rejections.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cadena and Blaimschein. Applicants respectfully submit that the Office Action fails to support a *prima facie* case of obviousness at least because the combination of Cadena and Blaimschein fails to teach or suggest all of the elements of Applicants’ independent claim

1. MPEP § 706.02(j) states:

To establish a *prima facie* case of obviousness, three basic criteria must be met ... the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Applicants’ independent claim 1, as amended, is directed to a process for finishing- machining of bearing positions on main bearing journals and connecting rod bearing journals of crankshafts for motor car engines. The crankshafts have roundings between the bearing positions and transitions adjacent in each case to the bearing

positions. The process includes deep rolling the roundings with a deep rolling tool. The process also includes, while maintaining a distance interval to an individual transition in each case, machining the bearing position concerned by removal of material with a small cutting depth.

By way of example and with reference to Fig. 4 (reproduced below), a bearing position 11 is deep rolled in a transition area 14 (e.g., a rounding). The surface 16 of the bearing position 11 is then finishing-machined by removal of material, for example, by grinding with a grinding disk (not shown), while the grinding disk maintains a distance interval 17 from the transition 7. In one embodiment, a grinding depth 18 of 0.1 mm of the grinding disk can result in a usable bearing width 19 of the bearing position 11 (note that a distance interval from the end of the arrow of line 19 to part 7 is maintained during machining). In another embodiment, a grinding depth 20 of 0.3 mm can result in a usable bearing width 21 that is narrower than the usable bearing width 19 (note that a distance interval from the end of the arrow of line 21 to part 7 is maintained during machining).

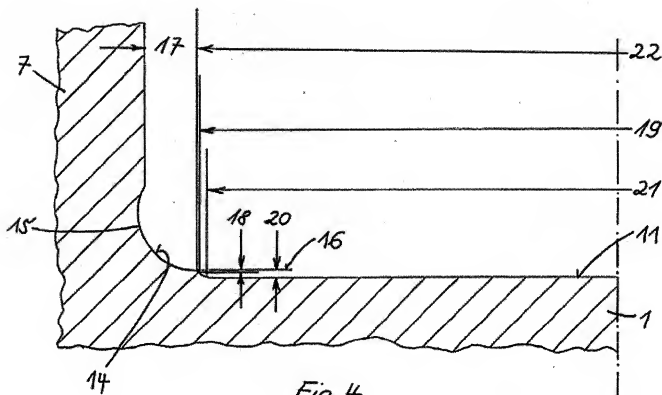
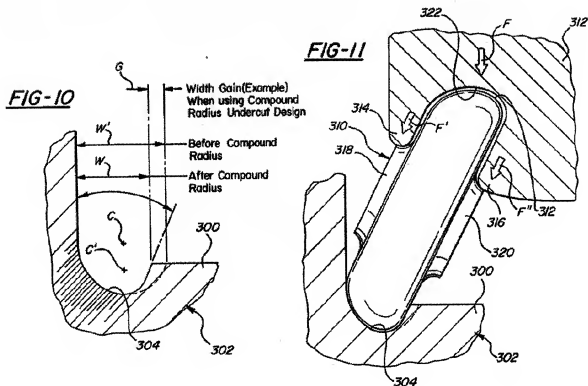


Fig. 4

Cadena and Blaimschein combined fail to teach or suggest Applicants claimed requirement: while maintaining a distance interval to an individual transition in each case, machining the bearing position concerned by removal of material with a small cutting depth. Cadena discloses a rolling tool for deep rolling fillets of crankshaft journals. Cadena at Abstract. However, Caneda does not disclose machining the bearing position; Cadena's disclosure is silent with respect to machining after rolling. Indeed, Caneda does not concern any material removal after rolling. FIGS. 6-11 of Caneda show that Cadena's bearing position is not subject to machining or material removal. For example, as shown in FIGS. 10 and 11 (reproduced below), the crankshaft **302** has a surface of pin journal **300** which is vertically higher than the annular undercut **304**, and thus no material has been removed, e.g., by machining. (Compare with Fig. 4 of the present application in which surface **16** is machined such that the bearing position **11** does not extend vertically past the transition area **14**.) Furthermore, Cadena provides no teaching or suggestion to maintain a distance interval to an individual transition when machining the bearing position, as Caneda does not concern machining in the first place.



Blaimschein does not remedy the deficiencies of Cadena at least because Blaimschein does not teach or suggest any roundings between the bearing positions and the transitions. Blaimschein also fails to teach or suggest while maintaining a distance interval to an individual transition in each case, machining the bearing position concerned by removal of material with a small cutting depth. Instead, Blaimschein teaches that "the driven tool is moved along a circular path which surrounds the workpiece as the latter is machined." Blaimschein at col. 1, ll. 47-50. As shown in FIGS. 1-3 of Blaimschein (reproduced below), the compound tool slide 10 is movable along the machine bed 4.

FIG. 1

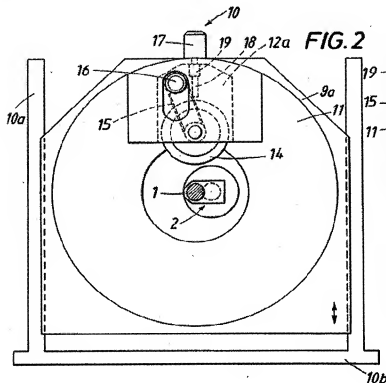
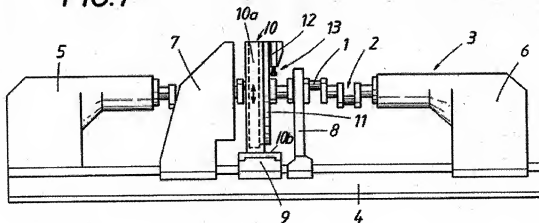


FIG. 2

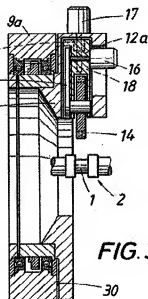


FIG. 3

Blaimschein at col. 3, ll. 20-22. According to Blaimschein, "[t]he illustrated compound tool slide 10 comprises horizontally movable slide 10b...." Blaimschein at col. 3, ll. 22-26. The compound tool slide 10 also includes a machining unit 13 and the machining unit 13 includes a grinding wheel 14. Blaimschein at col. 3, ll. 28-35. Therefore Blaimschein's machining tool (e.g., the grinding wheel 14 in FIG. 3) moves about horizontally between the two transitions of crankshaft 2 (e.g., referring to FIG. 3, the two rectangular transitions on the edges of the crankpin 1). Thus, Blaimschein fails to teach or suggest machining while maintaining a distance interval to an individual transition, as required by Applicants' independent claim 1.

For at least the foregoing reasons, Applicants respectfully submit that the Examiner fails to establish a *prima facie* case of obviousness because the combination of Cadena and Blaimschein does not teach or suggest all of the elements of Applicants' independent claim 1. Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 U.S.C. § 103(a) be reconsidered and withdrawn. Applicants also respectfully submit that claims 2-7 are allowable because they depend upon allowable base claim 1.

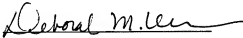
CONCLUSION

Applicants respectfully submit that all of the pending claims are in condition for allowance and requests early favorable action. If the Examiner believes a telephonic interview would expedite the prosecution of the present application, the Examiner is welcome to contact Applicants' Attorney at the number below.

Respectfully submitted,

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